CHAPTER TEN

Conservation, Wildlife Management and Identification

Introduction

Would you hunt pheasants in the mountains? No. Would you hunt bighorn sheep in the prairie? Of course not. But how do you know where animals live, or what they like to eat, or what likes to eat them?

To be a successful hunter you need to know how wild animals interact with their environment. Understanding a few basic concepts will make you a better hunter and a better conservationist. That's what this chapter is all about!

Respect for wildlife

At some point in your hunting career you will have to grapple with difficult questions that society and nonhunters may ask of you: If a hunter's basic goal is to kill, why is it important for a hunter to have respect for that animal? Can you kill something you respect? Should you? Should hunters also be conservationists? Why?

Most hunters have immense respect for the wildlife they hunt—and for the wildlife they don't hunt. They also respect the land that supports wildlife. Hunting can teach you to understand the cycles of nature and make it easier to accept that death is a natural and important part of life.

Being a responsible hunter means respecting wildlife and giving something back in exchange for the continued privilege to

Learning Objectives

At the end of this chapter, you will be able to:

A. Understand the concepts of habitat, carrying capacity, and limiting factors.

B. Define wildlife management and explain the role of hunting in managing wildlife.

C. Define conservation, and list at least three ways in which hunters pay for and contribute to conservation.

D. Identify Montana's primary game species.

Key Words

Habitat
Environment
Population
Arrangement
Species
Carrying capacity
Predator
Limiting factor
Wildlife
Wildlife management
Conservation
Urbanization
Pittman Robertson Act of 1937

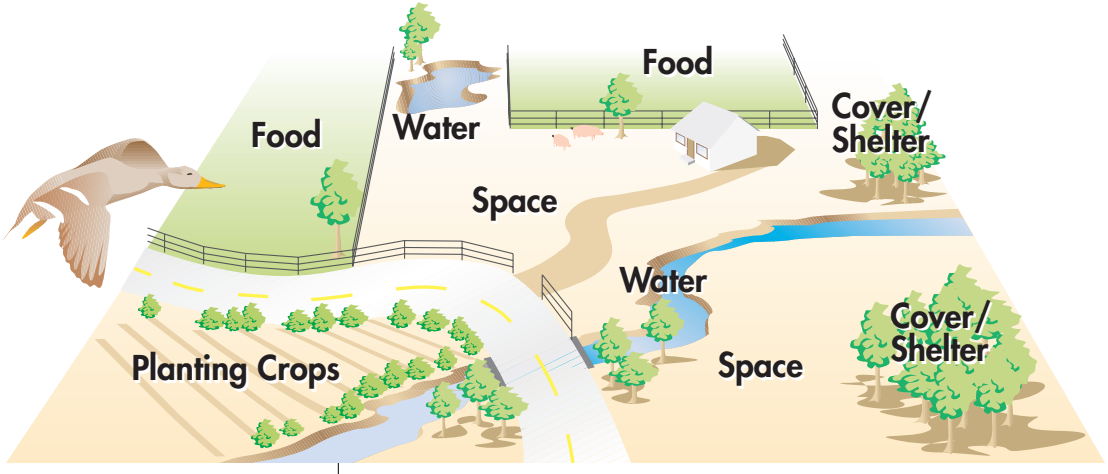
Turkey release in Montana.

hunt year after year. As a group, hunters have done more to help wildlife than anyone else. Through their support for wildlife management and conservation programs, hunters are directly responsible for many of the healthy wildlife populations we enjoy today.

A. What is habitat and why is it important?

An animal's **habitat** is its home—its **environment**. A habitat includes everything that an animal needs. The quality and size of a habitat determine the number of animals (the **population**) that can live there.

Different animals require different types of habitat, but every animal—like every human—has certain basic requirements: **food**, **water**, **shelter** and **space**. If one of these things is missing, an animal will not survive for long.



But it is not enough just to have food, shelter, space and water. The **arrangement** of these basic things in any particular area is also important and determines the type of animal that can live in that area. Each **species**, or type, of animal requires a different sort of arrangement.

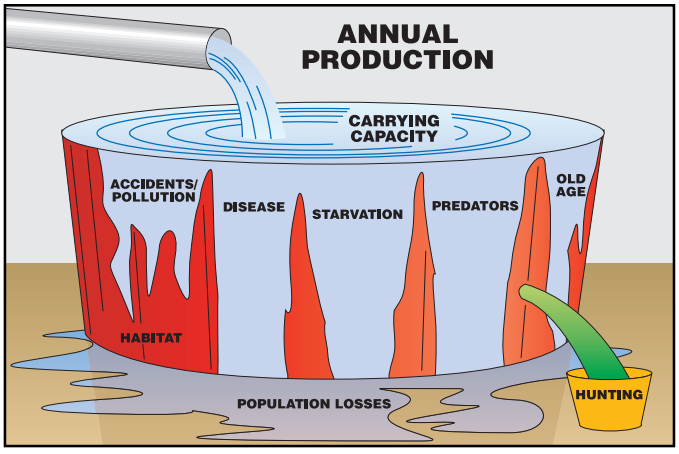
For example, let's say we have 100 acres of land with plenty of food, water, shelter and space. Now let's say a highway runs through the middle of the land, separating the food from the water. Would the arrangement of this land make a good habitat for a deer? Why or why not? Or imagine that our 100 acres of land is marshy, or underwater for much of the year. What kinds of animals might this arrangement favor and disfavor?

Carrying capacity

Each habitat has a **carrying capacity** for any given type of animal. Carrying capacity is the number of animals that can live in

a habitat without damage to the habitat or the animals. If our 100 acres of land has enough food, water, shelter and space to support one deer per acre, then the carrying capacity of that habitat for deer would be 100 deer.

If, however, the deer population grows larger than the carrying capacity of 100, the habitat may be damaged. Nature, when left alone, restores the deer population to its carrying capacity using different strategies. **Predators** (animals that eat other animals, or prey), may take advantage of the large prey population. Or, if there is not enough food, some deer may starve to death, or fall victim to disease as a result of being undernourished. A given area can only support so many animals. Therefore, wild animals can never be "stockpiled" in excess of the carrying capacity of a habitat.



Carrying capacity is the number of wildlife a habitat can support.

Limiting factors

Limiting factors determine the carrying capacity of a habitat. If there is only enough food for 100 deer on our land, then food is a limiting factor. In other words, the limited food supply keeps our habitat from supporting more than 100 deer even if water, space and shelter could support more. If water is in very short supply, then water is a limiting factor. A limiting factor is anything that keeps a habitat's carrying capacity from rising. What other things could be limiting factors?

A habitat's carrying capacity naturally changes over time. In some instances, however, it can be changed by biologists or managers who manipulate , or change, any one of the limiting factors—food, water, shelter, space—so as to favor or disfavor certain species.

Habitat improvement

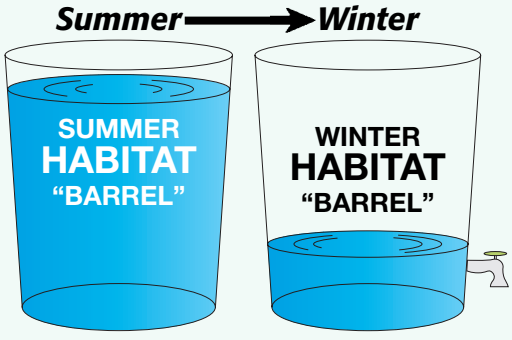
Biologists and managers can sometimes control populations by improving habitat. They do this by increasing or decreasing one or more of the limiting factors. They might plant forage that deer like to eat, or burn certain areas so that brushy new growth provides additional food for deer or shelter for other wildlife. They might also eliminate predators or try to control the spread of diseases.

All of these methods can raise the carrying capacity of the land. But remember: increasing the availability of one limiting factor isn't always enough since the other limiting factors also need to be considered. What are some other ways to enhance a habitat?

Habitat loss

Think back to our 100 acres of land. If we build an office complex and parking lot on, say, 50 acres of that land, how will that

Winter Pinch Period



Number of deer the habitat will support during summer.

Number of deer the habitat will support during winter.

In both examples shown, the deer is in balance with its habitat. But when winter comes, the quality and quantity of the habitat shrinks, and some deer will die. List below as many reasons as you can for the death of these deer.

Deer losses

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Fill in the blank:

The number of deer the habitat will support through the winter is called the _____ _____ for that deer habitat.

affect its carrying capacity? What would happen to its carrying capacity for deer if we decided to grow crops on the remaining 50 acres?

Habitat loss is the number one problem facing wildlife today. As human populations grow, we need more land on which to live, work and grow food. As a result, humans may destroy wildlife habitat by taking over natural areas and by polluting the air, soil, and water. If we want wildlife to survive and to thrive, we must make sure that the needs of wildlife are met; to do that, we must consider how our actions affect animals and their habitat.

B. Wildlife management

The term **wildlife** refers to animals that are not domesticated (raised by humans). **Wildlife management** refers to human efforts to conserve wild animals by maintaining healthy populations within the carrying capacity of their habitat. Successful wildlife management requires an understanding of how animals, their environment and people interact. Wildlife management is as much about managing people as it is about managing wildlife!

Delicate balance

Balancing the needs of wildlife with the needs and desires of humans is not always easy. Different people want different things: some want large wildlife populations so they can have good hunting opportunities while others want them because they enjoy watching wildlife or having it around. But for still others, large populations of certain animals can cause problems. Farmers may have trouble with deer eating their crops, or ranchers' cattle may have to compete with elk and prairie dogs for scarce forage. Troubles aren't limited to rural areas: deer often invade backyard gardens and orchards in cities or suburbs, and large, mobile deer populations can make for dangerous driving.

Hunting

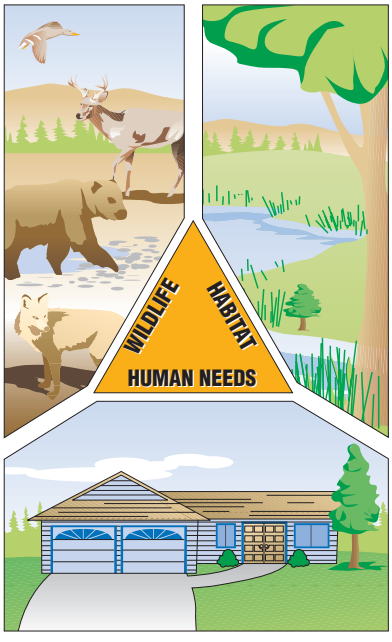
So what do wildlife management and habitat have to do with hunting? The best hunters are not only knowledgeable about wildlife, but are also committed to maintaining healthy wildlife populations and habitats. Nature uses starvation, disease, and

predators to limit populations and protect habitats. Wildlife biologists and managers can use hunting to keep populations within their carrying capacity. By carefully controlling how, when and what wildlife can be hunted, a biologist can rebuild wildlife populations that are too low or thin populations that are too high.

For example, have you ever wondered why most hunting seasons are in the fall? In late summer and early fall, after a summer of abundant forage, deer populations are at their highest. But winter is just around the corner and forage is likely to be in short supply. If there are more deer than the habitat can support through a long winter, many deer will not survive. A fall hunting season reduces numbers to a level that the changing habitat can better support.

Or, have you ever wondered why restrictions are placed on certain hunting seasons or species? For example, some hunting districts may have a "buck-only" season for mule deer because biologists have decided that the population needs to be increased. If hunting is restricted to the males, then more females will survive to produce more young and the population should increase. On the other hand, if the population is too large, biologists and managers might allow the harvesting of one or more females. This reduces the number of females and the number of young born and the population should decrease.

Regardless of the management plan or strategy adopted, the most important thing is to make sure that enough mature animals are left and can survive the winter to produce young animals next spring. Hunting seasons, bag limits and license quotas are all carefully set to protect this breeding stock.



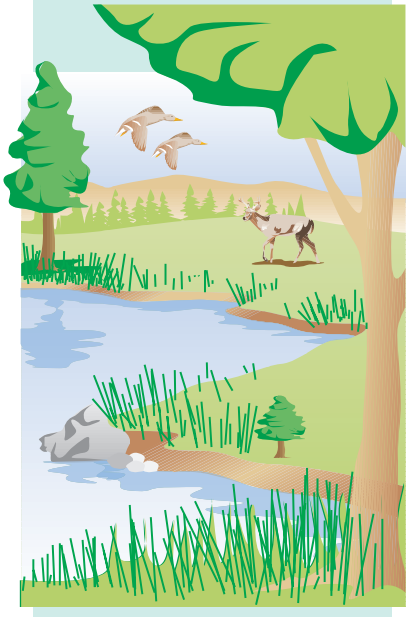
Wildlife management creates a balance between human and natural environments.

C. What is conservation and how do hunters help?

Think about the impact humans have had on wildlife. Before any humans occupied the North American continent, the laws of nature controlled wild animals. Humans changed that by taking the land to use for our own purposes. When we build houses, shopping centers, or offices (a process called **urbanization**), we change the carrying capacity of the land. When we farm, ranch, mine, log or build roads we also change the carrying capacity. And, when we change the carrying capacity, we affect the number and types of wildlife than can live on that land. Hunting, too, has an effect—sometimes good and sometimes bad—on wildlife populations.

Of course, not all human activity is necessarily bad for wildlife. As we have seen, we've learned how to manage some wildlife populations successfully so that these animals can live side by side with humans—as long as humans are willing to follow the principles of conservation.

The effects of urbanization on habitat



Before.

After.

Conservation is the responsible care and management of wildlife. It means that we think about the possible effects of our actions on wildlife and that we act in such a way that animal populations are able to grown and sustain themselves.

Most hunters are conservationists. They understand their role as not only top "predator," but also as the only predator that can intentionally help their prey through conservation efforts. Hunters contribute time and money to projects that benefit wildlife and wildlife habitat. They join wildlife conservation organizations. And when they hunt they obey laws and regulations.

Where does the money for conservation come from?

Whether you realize it or not, as a hunter you contribute money to wildlife conservation every time you buy a hunting license, duck stamp, rifle or box of ammunition.

The money from your hunting license helps Montana Fish, Wildlife & Parks pay for conservation projects as well as law enforcement, Hunter Education and other programs.

When you buy a federal duck stamp, the money goes directly to federal conservation programs to help waterfowl. Hunters provide about $185 million per year through license fees nationwide.

The Pittman-Robertson Act (also known as the Federal Aid in Wildlife Restoration Act) **of 1937** charges an 11% tax on the purchase of firearms, ammunition or archery equipment. Hunters played an important role in getting this law passed and the money raised goes directly to wildlife conservation and Hunter Education. Hunters provide almost $86 million a year for conservation through this tax—over $2 BILLION since 1937! It is the single biggest source of money collected nationally for wildlife.

Hunters also pay through fees for memberships in organizations such as Pheasants Forever, Rocky Mountain Elk Foundation, National Wild Turkey Federation, Mule Deer Foundation, Ducks Unlimited and other conservation groups. The main purpose of these organizations is to conserve wildlife and its habitat and through these organizations, hunters raise millions of dollars and volunteer thousands of hours to benefit wildlife.

Hunters pay for wildlife management and conservation through license fees, a special tax and memberships in wildlife conservation organizations!

Conservation minded hunters have done more to help wildlife populations than any other segment of society. Contrary to popular belief, regulated hunting does not cause wildlife to become endangered or extinct. In fact, many species exist today only because of the efforts and commitment of responsible, respectful hunters.

You can help!

Because wildlife can't speak for itself, hunters (and other interested people) must speak on its behalf. Here are some things that you can do:

- **Stay informed**. Learn about the impacts of land use decisions on wildlife.
- **Become involved**. Attend meetings, get to know the people responsible for making decisions and become a positive voice for conservation.
- **Follow-up**. When decision-makers make decisions that benefit wildlife, let them know what great choices they made. When they make bad decisions, don't make them your enemies, but let them know that you hope they'll consider wildlife next time.

In some areas, biologists ask hunters to report the kinds and numbers of animals they see while hunting, or to provide samples from their animals such as teeth or wings. These parts are used to age the animal and determine its health. In Montana, hunters are required to stop at check stations to report their kill. Sometimes hunters are asked to answer a few questions about their hunting activities when they buy a license, or they may receive a written survey in the mail asking about their hunting activities. This information is vital to biologists and managers, and your help in providing information is important. The future of hunting greatly depends on the continued participation of hunters in efforts like these.

Source: Ohio Division of Wildlife

D. Wildlife identification

One of the principal rules of firearm safety is: Be sure of your target and beyond. In other words, you must be able to identify what species of wildlife you are looking at.

Imagine you are hunting in an area where both white-tailed and mule deer live, but hunting regulations allow you to take only white-tailed deer. You spot what is clearly a deer, but you can't

Federal Aid in Wildlife Restoration (Pittman Robertson) Act

- Sponsored by Senator Key Pittman (Nevada) and Representative A. Willis Robertson (Virginia). President Franklin Delano Roosevelt signed it into law in 1937.
- Pittman Robertson funds are administered by the U.S. Fish and Wildlife Service.
- P-R money is available to the states to buy, develop, maintain, and operate wildlife management areas;
- P-R money is available to the states to conduct surveys and research necessary to restore wildlife;
- P-R money is available to the states to finance Hunter Education. These programs reach about 650,000 people a year.
- People who never hunt also benefit from P-R. Wildlife management areas and wetlands are useful to all nature lovers and watchers. Funds go towards management of all species, game and nongame alike.

tell definitively which type it is. Before you shoot, it is your responsibility to make absolutely sure that the deer you are looking at is not a mule deer. Can you tell the difference? Can you tell the difference in the field with your heart pounding and a big buck ready to leap away at any second?

In Montana, it's illegal to take female pheasants. When a pheasant flies up in front of you, you have only a split second to decide if it's a rooster or a hen. Do you know what to look for?

Un-Endangered Species

A Wildlife Management Success Story

During the early 1900s, the future of many species of America's wildlife was in question. Destruction of habitat and commercial exploitation had reduced populations to critical levels. Contrary to popular opinion, hunters were not the cause of this decline. In fact, according to conservation experts, it was the excise taxes and license fees of the sportsmen of this country that helped to pay for programs that helped rescue many species of wildlife from extinction. This mini-poster shows just how successful sportsmen have been at helping wildlife.

Then → Now
1,200,000 → 3,760,000

Habitat destruction reduced Canada goose populations to a low of some 1,200,000 in the late 1940s. Today, there are more than three times that number.

Then → Now
500,000 → 36,000,000

In 1900, less than half a million white-tailed deer remained in the nation. Today, conservation programs have returned the white-tailed population to more than 36 million.

Then → Now
41,000 → 1,200,000

In 1907, only about 41,000 elk could be counted in the U.S. Today, populations in ten western states total approximately 1,200,000

Then → Now
100,000 → 5,600,000

By the early 1900s, encroaching civilization and habitat loss may have reduced the wild turkey population to under 100,000. Today conservation programs have restored the population to some 5.6 million birds.

Then → Now
73 → 20,000

In 1935, only 73 trumpeter swans were known to exist in the United States. Today there are some 20,000 in several parks and wildlife refuges.

Then → Now
12,000 → 1,000,000

About 50 years ago, the total U.S. population of pronghorn antelope was only 12,000. Today conservation programs have helped increase the population to more than one million.

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Wildlife identification is a skill. The best way to practice and develop it is to look for live animals in their natural habitats. Once you've found them, study them for a while and see how they behave.

Good hunters are good scouts

To locate a particular type of animal, do a little research to find out what sort of habitat that animal likes. Then find detailed maps of areas where you think that type of habitat exists. Keep in mind the things all wildlife need—food, water, shelter and space in a particular arrangement. Circle likely spots on your map and then go out and see what you can find.

Learn to look for natural signs that animals leave. Learn what a particular animal's track looks like. Animal droppings can tell you a lot about what kind of animals are around, what they are eating and when they are using a particular area. The skills you acquire in looking for wildlife come in handy during hunting season.

When you're trying to identify wildlife that's far away, it can be helpful to use binoculars or a spotting scope. Never use your riflescope to identify an animal. Remember, when you are pointing your scope at an animal, you are also pointing your rifle at that animal. What if the "animal" turns out to be another hunter? Use your riflescope only to aim and shoot.

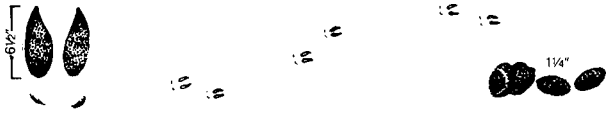
To be absolutely certain of the identity of your target, always look for more than one identifying characteristic before taking the shot.

Montana is home to many species of wildlife. Below are just a few of the species you need to be able to positively identify.

MOOSE

Size: length to 10 ft. (3 m); shoulder height to 7½ ft. (2.3 m); male weight to 1,400 lb. (635 kg); female (no antlers) weight 600-800 lb. (272.1-362.9 kg).

Habitat: mountain forests near shallow lakes, marshes and wet areas.



ELK

Size: length of bull to 9½ ft. (2.9 m); shoulder height 4-5 ft. 1.2-1.5 m); male weight 700-1,100 lb. (349.3-499 kg); female (no antlers) weight 500-650 lb. (226.8-294.8 kg).

Habitat: semi-open woodlands, mountain meadows in summer, foothills, plains, and valleys.

WHITE-TAILED DEER

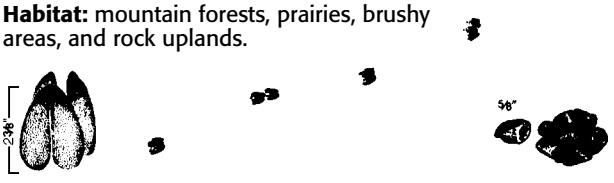
Size: length to 6 ft. (1.8 m); shoulder height to 3¾ ft. (1.1 m); male weight 75-400 lb. (34-181.4 kg); female (no antlers) weight 50-250 lb. (22.7-113.4 kg).

Habitat: brushy, low mixed woodlands, forest edges, and agricultural areas.

MULE DEER

Size: length to 6½ feet (2 m); shoulder height 3-3½ feet (.9-1.1 m); male weight 125-400 lb. (61.2-181.4 kg); female (no antlers) weight 100-150 lb. (45.4-68 kg).

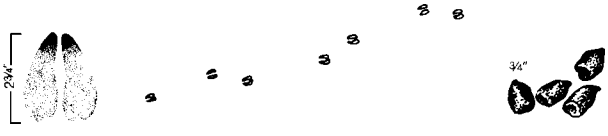
Habitat: mountain forests, prairies, brushy areas, and rock uplands.



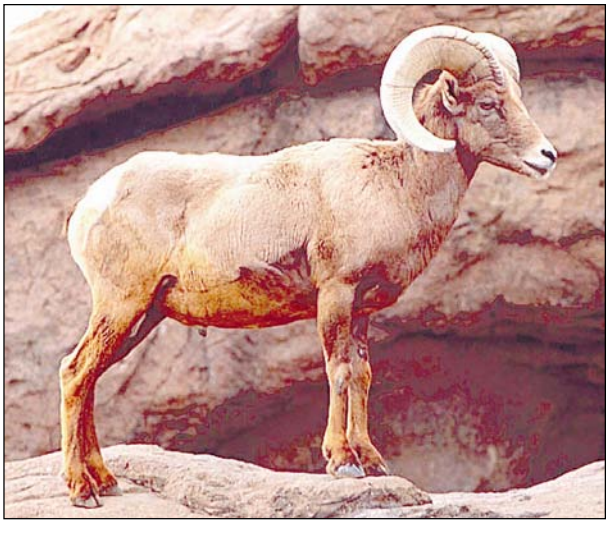
PRONGHORN

Size: length to 4½ ft. (1.4 m); shoulder height to 3½ ft. (1.1 m); weight 75-140 lb. (34-63.5 kg).

Habitat: plains, open prairie, sagebrush flats.

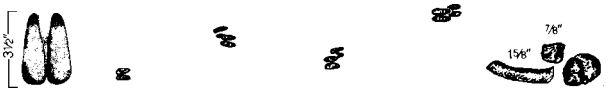


BIG HORN SHEEP



Size: shoulder height 2½-3½ ft. (.8-1.1 m); male weight 125-275 lb. (56.7-124.7 kg); female weight 75-150 lb. (34-68 kg).

Habitat: rugged mountain slopes in high country, with sparse timber and bushy plants.



MOUNTAIN GOAT

Size: head and body to 5 ft. (1.5 m); shoulder height 3⅓ ft. (1.1 m); weight to 276 lb. (125.2 kg).

Habitat: mountain tops above tree line in summer, lower elevations in winter.

BLACK BEAR

Size: length 5-6 ft. (1.5-1.8 m); shoulder height 2-3 ft. (.6-.9 m); weight 200-400 lb. (90.7-181.4 kg).

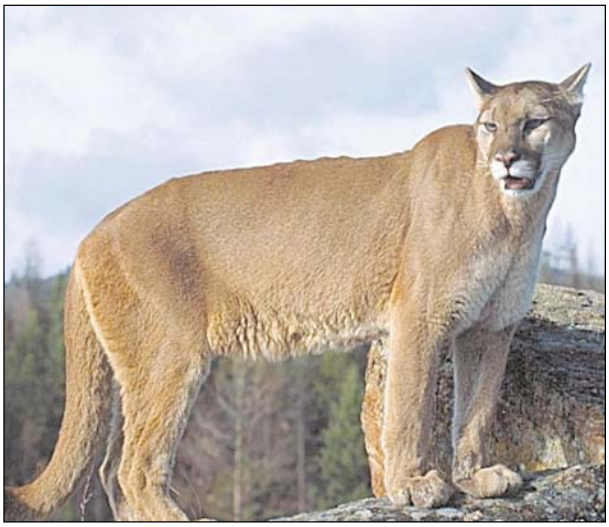
Habitat: forests, mountain forests.

GRIZZLY BEAR/BROWN BEAR

Size: length 6-7 ft. (1.8-2.1 m); shoulder height 3-3½ ft. (.9-1.1 m); weight 325-850 lb. (147.4-385.6 kg).

Habitat: forested areas of pine and fir trees, remote country and mountains.

MOUNTAIN LION/COUGAR



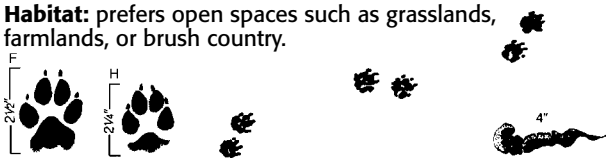
Size: head and body 42-54 in. (106.7-137.2 cm); tail 30-36 in. (76.2-91.4 cm); shoulder height 26-31 in. (66-78.7 cm); weight 80-180 lb. (36.3-117.9 kg).

Habitat: anywhere prey (deer and elk) and sufficient cover (trees, rocks) exist.

COYOTE

Size: head and body 46-49 in. (118-125 cm); tail 13-15 in. (33-38 cm); weight 24-31 lb. (11-14 kg).

Habitat: prefers open spaces such as grasslands, farmlands, or brush country.



GREY WOLF

Size: head and body 51-71 in. (130-180 cm); tail 17-18 in. (43-45 cm); weight 67-110 lb. (30-50 kg).

Habitat: wild areas, plains, forests, and tundras.

WILD TURKEY

Size: male to 48 in. (121.9 cm); female to 36 in. (91.4 cm).

Habitat: open timberland, mountain forest, logged over land, prairie where food is available.

RING-NECKED PHEASANT

Size: male 30-36 in. (76.2-91.4 cm); female 21-25 in. (53.3-63.5 cm).

Habitat: farmland with adjacent growth for cover, mixed woods and open prairie.

HUNGARIAN (GRAY) PARTRIDGE

Size: 12-14 in (30.5-35.6 cm).

Habitat: open farmland with tall plants or fence rows for shelter, and grain fields.

BLUE GROUSE

Size: 15-21 in. (38.1-53.3 cm).

Habitat: coniferous forests, logging slash, burned-over timberland, sub-alpine clearings.

RUFFED GROUSE

Size: 16-19 in. (40.6-48.3 cm).
Habitat: brushy timberlands and coniferous forest edges.

SHARP-TAILED GROUSE

Size: 15-20 in. (38.1-50.8 cm).
Habitat: open brushlands, prairies, clearings and forest edges.

GREATER SAGE GROUSE

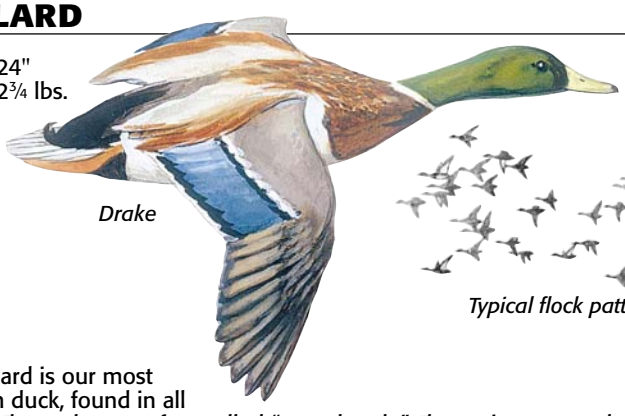
Size: male 26-30 in. (66-76.2 cm); female 22-23 in. (55.9-58.4 cm).
Habitat: high sagebrush plains and plateaus.

MOURNING DOVE

Size: 11-13 in. (27.9-33 cm).
Habitat: dry uplands, grainfields, and suburbs.

MALLARD

Length: 24"
Weight: 2¾ lbs.



Drake

Typical flock pattern

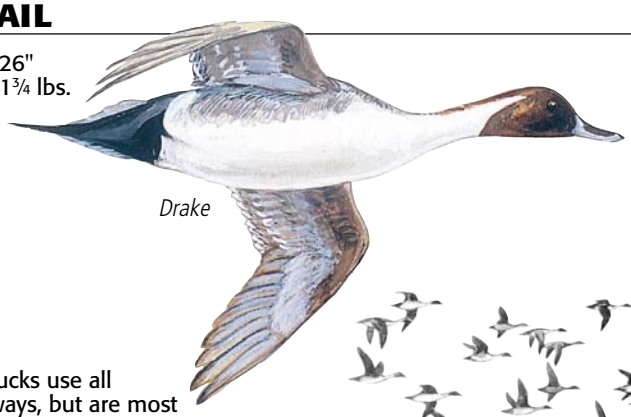
The mallard is our most common duck, found in all flyways. The males are often called "greenheads." The main wintering area is the lower Mississippi basin, and along the gulf coast, but many stay as far north as open water permits.

Flocks often feed in early morning and late afternoon in nearby harvested fields, returning to marshes and creeks to spend the night.

The flight is not particularly rapid. Hens have a loud quack; the drake's voice is a low-pitched *kwak-kwek.*

PINTAIL

Length: 26"
Weight: 1¾ lbs.



Drake

Typical flock pattern

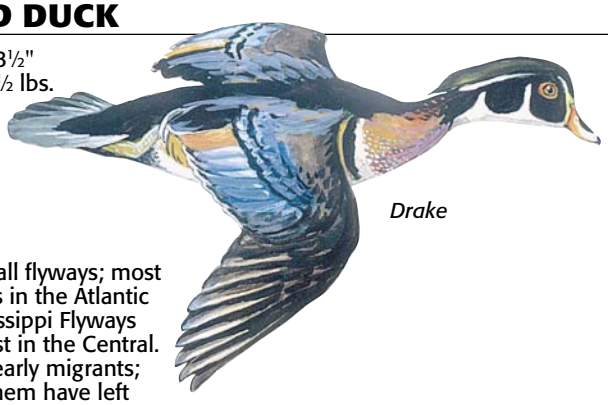
These ducks use all four flyways, but are most plentiful in the west. They are extremely graceful and fast fliers, fond of zig-zagging from great heights before leveling off to land.

The long neck and tail make them appear longer than mallards, but in body size and weight pintails are smaller.

They are agile on land and often feed in grain fields. The drakes whistle; the hens have a coarse *quack.*

WOOD DUCK

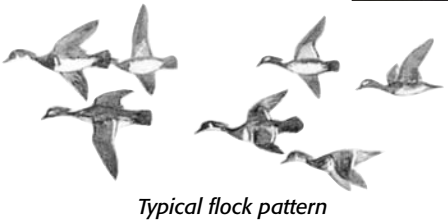
Length: 18½"
Weight: 1½ lbs.



Drake

Found in all flyways; most numerous in the Atlantic and Mississippi Flyways and fewest in the Central. They are early migrants; most of them have left the northern states by mid-November.

These ducks frequent wooded streams and ponds; and perch in trees. They fly through thick timber with speed and ease and often feed on acorn, berries, and grapes on the forest floors.



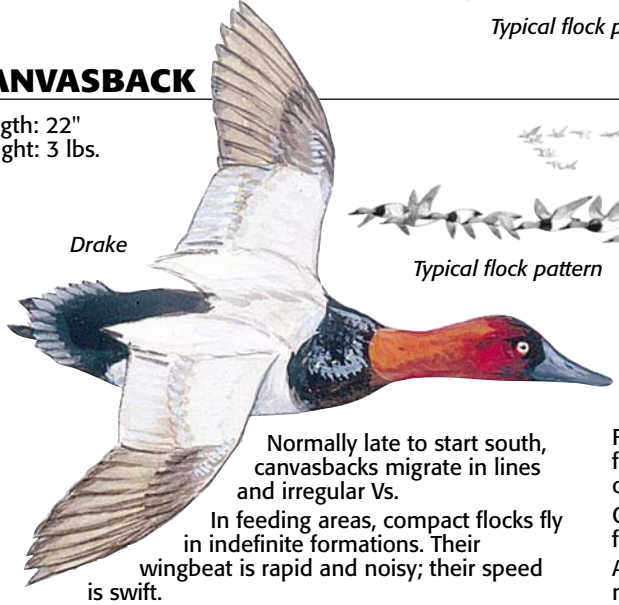
Typical flock pattern

Flight is swift and direct; flocks are usually small.

In the air, their wings make a rustling, swishing sound. Drakes call *hoo-w-ett,* often in flight; hens have a *cr-r-ek* when frightened.

CANVASBACK

Length: 22"
Weight: 3 lbs.



Drake

Typical flock pattern

Normally late to start south, canvasbacks migrate in lines and irregular Vs.

In feeding areas, compact flocks fly in indefinite formations. Their wingbeat is rapid and noisy; their speed is swift.

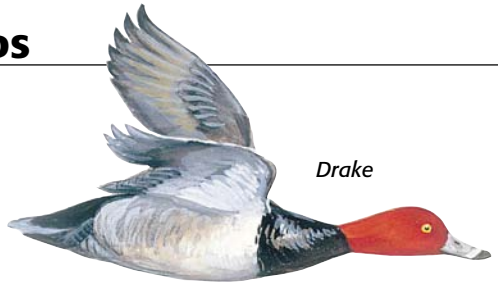
Feeding behavior is highly variable. In some areas they feed at night and spend the day rafted up in open water; in other areas they feed inshore mornings and evenings.

On the water, body size and head shape distinguish them from scaups and redheads.

A drake's voice is a *croak, peep* and *growl;* hens have a mallard-like *quack.*

REDHEADS

Length: 20"
Weight: 2½ lbs.



Drake

Redheads range coast to coast, with the largest numbers in the Central Flyway. Migratory flocks travel in V's, move in irregular formations over feeding area. Redheads are often found associating with canvasback.

In the air, they give the impression of always being in a hurry.

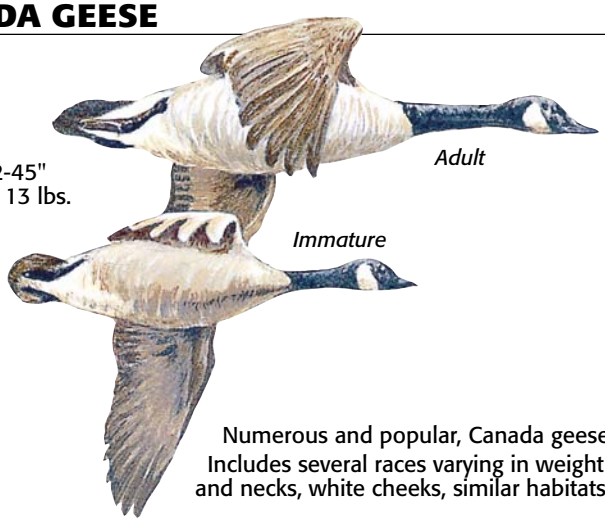
Typical flock pattern

Redheads usually spend the day in large rafts in deep water; they feed morning and evening in shallower sections.

Drakes *purr* and *meow;* hens have a loud *squak;* higher than a hen mallard's.

CANADA GEESE

Length: 22-45"
Weight: to 13 lbs.



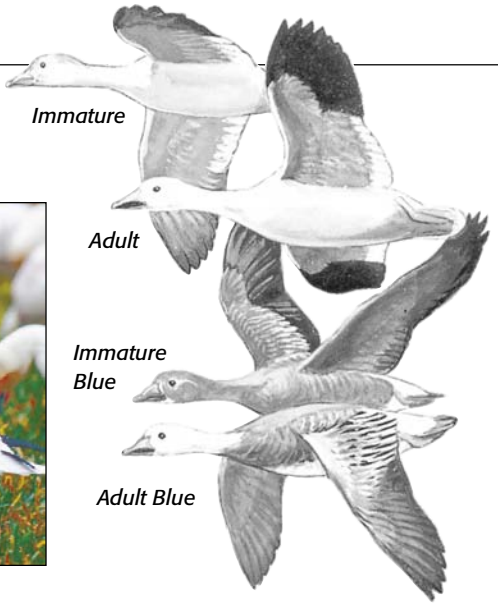
Adult

Immature

Numerous and popular, Canada geese are often called "honkers." Includes several races varying in weight from 3 to over 12 pounds. All have black heads and necks, white cheeks, similar habitats and voices. Sexes are identical.

SNOW GEESE

Length: 26"
Weight: 1¾ lbs.



Immature

Adult

Immature Blue

Adult Blue

Two races of snow geese are recognized: greater snows along the Atlantic Coast, and lesser snows elsewhere on the continent. Blue geese are a color phase of the lesser snow.

Chapter Ten Quiz

1. Hunting is an important tool of wildlife management.

   _____ true

   _____ false

2. Name the four essential elements of wildlife habitat.

   _____, _____, _____, and _____.

3. Which of the following is a major threat to wildlife populations today?

   _____ Hunting

   _____ Disease

   _____ Habitat loss

4. Name the federal act that charges a special tax on guns and other hunting equipment to raise money for conservation and wildlife management.

   _____

5. A wildlife conservationist: (Mark the correct answer.)

   _____ tries to save the life of every animal.

   _____ tries to promote healthy populations of animals.

   _____ protests against hunting and trapping.

6. Which of the following are tools biologists use to manage wildlife? (Mark the correct answer.)

   _____ Habitat improvements

   _____ Hunter surveys

   _____ Animal inventories

   _____ All of the above

7. Who pays for wildlife management in Montana? (Mark the correct answer.)

   _____ Bird watchers

   _____ Hunters

   _____ Wildlife watchers

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